

# Fact Sheet --

## *Air Quality and Atmospheric Change*

### Particulate Matter and Animal Operations

#### What is Particulate Matter (PM)?

Particulate matter (PM) is currently a “criteria air pollutant” which means that the US Environmental Protection Agency (EPA) has identified PM as a pollutant that causes significant health (heart and lung) and environmental (deposition, visibility) effects. PM can be either solid particles or liquid droplets and come in a variety of sizes, shapes, and chemical composition. PM can be emitted directly (primary PM - dust, pollen, soot, etc.) or formed in the atmosphere (secondary PM – formed from the reactions and condensation of sulfates, nitrates, volatile organic compounds [VOCs], and ammonia). The EPA has currently established National Ambient Air Quality Standards (NAAQS) for two forms of PM:

- Fine PM – currently regulated as PM<sub>2.5</sub> (aerodynamic diameter less than or equal to 2.5 micrometers) Note: The diameter of the average human hair is 70 micrometers.
- Coarse PM – currently regulated as PM<sub>10</sub> (aerodynamic diameter less than or equal to 10 micrometers)

Larger size fractions of PM such as total suspended particulate (TSP) are also currently regulated by state or local regulatory agencies.

#### Where is PM a Concern?

PM can be a local (deposition or transport), regional (formation and transport), and global (transport) concern. Greater emphasis on addressing PM concerns is likely to occur in areas that do not meet the PM NAAQS or have other PM issues such as regional haze or local deposition and visibility effects.

#### How Do Animal Operations Affect PM?

Animal operations can influence PM in a variety of ways, including:

- Animal activity can produce dust emissions which can be carried by wind or building ventilation.
- Feed, material, and manure storage and handling can produce dust emissions.
- Combustion in on-farm equipment can produce fine PM and other by-products that lead to PM formation.
- Manure decomposition and land application can produce emissions of ammonia and VOCs.

## What Can I Do?